Patient Satisfaction & Self-care Advice Outcomes with a Telephone Nursing Service

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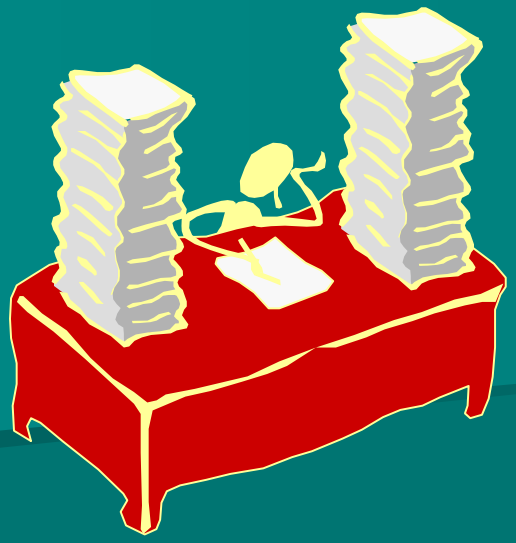

Statement of Problem

Minimal research exists about telephone nursing practice; none from a military population. Further research is needed to explore the usefulness and effectiveness of telephone nursing interventions on patient outcomes.

Statement of Purpose

This study examined:

- **program use**
- **patient satisfaction**
- **outcomes from self-care advice in users of a telephone nursing service at a MTF using the *Satisfaction Survey* (Greenburg, 1999)**

Significance & Justification

Tremendous growth of telephone nursing services

- **access increased from approx. 2 million to 35 million Americans over a 5-year period in the early 1990's** (Larson-Dahn, 2001)
- **Now more than 75 million people with access** (O'Connell et al., 2002)

Significance & Justification

Benefits of telephone nursing services:

- Facilitate access to appropriate levels of care
- Enhance continuity of care
- Improve quality through access to information and services
- Reduce overall health care costs

Significance & Justification

Concerns about telephone nursing practice:

- Safety
- Training of nurses
- Lack of standardization in practice
- Possible decline of the nurse/client relationship; impersonal
- Quality of care and patient satisfaction

Review of Literature

Emerging role of telephone nursing: Larson-Dahn, 2001; Nauright et al., 1999

- Further research related to quality of care, patient satisfaction, and patient outcomes is recommended
- Tremendous growth and expanding access
- Evidence suggests that telephone nursing interventions may lead to improved health outcomes if advice is followed

Review of Literature

Decision-making in telephone nursing practice: Edwards, 1994; Marsden, 1998; Wachter et al., 1999

- Protocols critical to safety and standardization of the decision-making process
- Telephone triage based on standardized protocols may significantly decrease ED utilization leading to decreases in overall health care costs

Review of Literature

Research on specific telephone nursing programs: O'Connell et al., 2001; Dale et al., 1998; Greenburg, 2000; Kalman et al., 2001; Lattimer et al., 1998; Moore et al., 2002; Poole et al., 1993; SWOOP Group, 1997

- Approximately 50% of callers managed with home care advice only
- High patient satisfaction scor

Review of Literature

Research on specific telephone nursing programs (cont.):

- Very satisfied patients more than 4 times more likely to be compliant; parents or caregivers of patients <1 yr of age were more than 20 times more likely to be compliant (Moore et al., 2002)
- Donabedian's model for evaluating quality of care based on patient satisfaction (Greenburg, 2000)

Theoretical Framework

Donabedian's model for the assessment of quality medical care

- **patient satisfaction is an indicator**
- **two elements determine performance of practitioners: technical quality and interpersonal skills**
- **the interpersonal relationship established by the practitioner motivates the patient into collaboration in the care process**

Methods

- **Research Design: Descriptive, correlational**
- **Research Setting: midwestern MTF**
  - **65-bed facility**
  - **more than 475,000 outpatient and dental visits, 3,000 same-day surgeries, and 5,000 admissions annually**

Population

- **Target population: clients enrolled to the MTF as their primary care manager: approx. 38,500 enrollees**
- **Accessible population: enrollees that call the MTF's telephone nursing service -- the Health Care Information Line (HCIL)**

Sampling Plan

- Convenience sample
- Sample size of 100, based on:
  - Results of Power Analysis for the Social Sciences (PASS) software program
  - Research question #6 – correlation of moderate to weak magnitude could be detected (PASS → 46 subjects minimum)

Sampling Plan

- **Sample size (cont.)**
  - **the estimated volume of HCIL calls**
  - **realistic time constraints of the researcher**
  - **Post-hoc analysis – actual power level was 0.38; due to large disparity in participants who did not follow advice (N = 9) vs. those who did (N = 91)**

Procedures

- Sample obtained through review of computerized documentation of calls
- Telephone survey conducted within 72 hours of the HCIL encounter
- Scripted introductory statement
- Maximum of 5 callbacks before subject replaced
- No messages left on answering machines

Instrumentation

- ***Satisfaction Survey*** **– Greenburg, 1999**
- **Developed by a graduate student**
- **Content validity established by a group of experts using a small convenience sample**
- **Measured patient satisfaction and self-care advice outcomes**
- **15 items:**
  - **3 yes/no**
  - **4 Likert-type**
  - **8 open-ended**

Data Analysis

Research Question #1 - What were the

patient characteristics of the telephone

nursing service?

- **Descriptive statistics for demographic data**
  - **Age - mean, SD, median, range, and IQR**
  - **Beneficiary status and rank of active duty members or active duty sponsors - frequencies and percentages**

Description of Sample

- 79% of callers were female with a mean age of 36.0 ± 10.2
- Mean age of male callers was 38.1 ± 14.6
- 48% of callers actually called about a family member, therefore second analysis performed

Description of Sample

- **When patient = family member:**
  - **mean age of male and female family members was 14.3 ± 14.4 and 6.8 ± 9.2 respectively; median age was 8 and 3 respectively**
  - **Both male and females called about children, but women more often called about younger children**

Description of Sample

Demographics of Sample: Beneficiary Status and Rank of AD or AD Family Member

BENEFICIARY STATUS	*f*	%
AD	16	16
AD Family Member	54	54
Retiree	10	10
Retiree Family Member	17	17
Missing	3	3
RANK	***f***	**%**
E1 –E3	6	6
E4 –E6	38	38
E7 & above	12	12
O1 – O3	28	28
O4 – O6	13	13
O7 & above	0	0
Missing	3	3

Note: AD = active duty, E = enlisted, O = officer

Data Analysis & Findings

Research Question #2 - What was the frequency of use of the telephone nursing service?

- **Descriptive statistics - Responses to Item #2 of the *Satisfaction Survey***
  - **Mean = 2.9 calls**
  - **SD = 1.3 calls**
  - **Median = 3.0 calls**
  - **IQR = 2-3 calls**
  - **Range = 1 – 6 calls**

Data Analysis & Findings

Research Question #3 – What percent of callers were first-time users?

- **Descriptive statistics**
  - **Response to Item #1 of the *Satisfaction Survey***
  - **Formula: number of first-time user participants (25) / total number of participants (100) = <u>25%</u>**

Data Analysis

Research Question #4 - What was the level of satisfaction reported among callers?

- **Descriptive statistics**
  - **Results of 4 Likert-type items of the *Satisfaction Survey***
  - **Likert scale based on 1 for the most negative response and 9 for the most positive response**

Findings

Level of Satisfaction with the Telephone Nursing Service Reported Among Users

	f	*Mdn*	*IQR*	*Range*
Item 9 – Helpfulness of nurse in meeting caller's needs	100	9.0	8.0-9.0	1 - 9
Item 10 – Satisfaction with overall telephone service	100	9.0	7.3-9.0	2 – 9
Item 11 – Likelihood of using service again	100	9.0	9.0-9.0	1 – 9
Item 12 – Likelihood of recommending to friends/family	99	9.0	9.0-9.0	5 - 9

Note: f = frequency, Mdn = Median, IQR = Interquartile range, R = range

Data Analysis

Research Question #5 - What were the self-care advice outcomes in users of the telephone nursing service?

- **Descriptive statistics**
  - **Results of 2 yes/no items of the *Satisfaction Survey***
  - **Analyzed using frequencies and percentages**

Findings

Self-care Advice Outcomes in Users of the Telephone Nursing Service

AGREEMENT – FOLLOW ADVICE	*f(%)*
No – items 5 & 6	1(1.0)
Yes – item 5; No – item 6	7(7.1)
No – item 5; Yes – item 6	2(2.0)
Yes – items 5 & 6	88 (89.8)

Data Analysis

Research Question #6 - Did the level of satisfaction in users of the telephone nursing service relate to self-care advice outcomes?

- **Biserial correlation**
  - **Used when one variable is dichotomized and the other is continuous**
  - **Item #6 (advice outcome) of the *Satisfaction Survey* is dichotomized (yes/no)**
  - **Item #10 (satisfaction) of the *Satisfaction Survey* is continuous (Likert-type scale)**

Findings

- The biserial estimate or *r* was
  $r_{bis} = 0.16$
- Corresponding p-value of 0.10
- The relationship between satisfaction and self-care advice outcomes could be described as having “little, if any” strength (Munro et al., 1986)

Data Analysis

Research Question #7 – To what extent could users be categorized as either likely or unlikely to follow self-care advice based on predictors of satisfaction (responses to items #9, #10, #11, #12 of the *Satisfaction Survey*)?

Data Analysis & Findings

- Discriminant function analysis was used to summarize the relationship between independent variables (responses to items #9, #10, #11, and #12) and dependent variables (responses to item #6)
- The Wilks' Lambda for this model was 0.958, p = 0.39
- The following table shows the rest of the analysis

Data Analysis & Findings

Summary of Discriminant Function Analysis

	Standardized Canonical Discriminant Function Coefficient	F	p
How helpful was the nurse?	**0.44**	**2.55**	**0.11**
How satisfied were you with this service?	**0.67**	**2.72**	**0.10**
How likely are you to use the service again?	**-0.52**	**0.20**	**0.66**
Would you			

Data Analysis

Four additional items, which were open-ended questions, were coded and categorized into meaningful groups using content analysis; emerging themes were identified

Findings

Item #3 – Can you tell me why you called to talk with a nurse?

1. **Physiological complaints (N=73)**
2. **Access-related questions (N=14)**
3. **Medication-related questions (N=6)**
4. **Other (N=8)**

Findings

Item #4 – What was the result of the phone call?

- Given home-care advice and/or advised to make an appointment (N=56)
- Advised to make a same-day appointment or go to ED (N=27)

Findings

Item #4 (cont.) – What was the result of the phone call?

- **Advised to call someone/somewhere else (N=9)**
- **Assisted in making an appointment (N=2)**
- **Other (N=6)**

Findings

Item #13 – What was it about this service that you particularly liked and/or disliked?

1. **Nurses' abilities and attributes (N=44)**
2. **Accessibility of the service (N=40)**
3. **Availability of medical advice (N=36)**
4. **Other (N=2)**

Findings

Item #13 (cont.) – What was it about this service that you particularly liked and/or disliked?

1. **Not satisfied with the nurse's response (N = 8)**
2. **Disliked the telephone system (N = 8)**

Findings

Item #14 – How do you think this service can be improved?

***51 participants offered no suggestions**

1. **Improve the nurses' access to information (N=20)**
2. **Improve and/or change the automated telephone system (N=19)**
3. **Other (N=9)**

Limitations

- The *Satisfaction Survey* had no established reliability
- Respondents may have provided socially desirable answers rather than being completely truthful
- The researcher may have had an inherent bias in interpreting findings
- Study sample was selected from a specific MTF and could not be generalized to the entire population

Limitations – cont'd

- As the study sample was a convenience sample selected from callers to the service, participants may have had a favorable bias towards the service compared to non-callers
- Collected data was self-reported, therefore could be inaccurate depending on recall ability of participants

Conclusions

- Most HCIL callers: females, mid-20's to mid- 40's
- Nearly half of callers ask health care questions about a family member – most frequently, young children
- Company grade and non-commissioned officers/family members use HCIL more frequently than retirees/family members
- Most HCIL users are repeat callers; ask questions about physiological symptoms

Conclusions

- Nearly all callers are satisfied with HCIL
- Level of agreement/compliance with nurses' suggestions can not be determined with the *Satisfaction Survey*
- Much larger sample is needed to detect any significant relationship between satisfaction and self-care advice outcomes
- Predictors of satisfaction do not explain likelihood of following advice; other variables may influence this decision

Recommendations

Replication of this study:

- **Utilizing different/expanded patient satisfaction tool - measure degree to which callers agree with/follow advice**
- **Using a larger sample - improve statistical power for determining statistically significant relationship (patient satisfaction and self-care advice outcomes)**
- **Utilizing medical claims or encounter data – include validation of callers' self-reporting related to following advice**

Nursing Implications

Evaluate effectiveness of telephone nursing services in regards to:

- **Cost reduction – decreasing ED visits and/or utilization of primary care appts**
- **Patient satisfaction as an indicator of quality of care**
- **Standardized practice – protocol usage**
- **Staff competence – education and training**

Thank you!

Any questions?

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